

Citation:

Cleophas TJ. Wine, beer and spirits and the risk of myocardial infarction: a systematic review. *Biomed Pharmacother.* 1999;53(9):417-23.

PubMed ID: [10554677](#)

Study Design:

Meta-analysis/Systematic Review

Class:

M - [Click here](#) for explanation of classification scheme.

Research Design and Implementation Rating:

NEUTRAL: See Research Design and Implementation Criteria Checklist below.

Research Purpose:

- To assess the current status of knowledge regarding the relationship between death and alcohol consumption
- To assess the relationship between myocardial infarction and consumption of different types of alcoholic beverages, both in low doses (1-4 drinks a day), and high doses (>4 drinks a day)

Inclusion Criteria:

Major cohort and case-control studies (regarding alcohol and myocardial infarction) as published and searched via Medline, as well as 1978-1998 volumes of the *New England Journal of Medicine*, the *Lancet*, the *British Medical Journal*, and the *Journal of the American Medical Association*.

Exclusion Criteria:

No exclusion criteria reported.

Description of Study Protocol:**Recruitment:**

Major cohort and case-control studies (regarding alcohol and myocardial infarction) as published and searched via Medline, as well as 1978-1998 volumes of the *New England Journal of Medicine*, the *Lancet*, the *British Medical Journal*, and the *Journal of the American Medical Association*. Search dates were unclear regarding Medline.

Design Meta-analysis/systematic review

Blinding used (if applicable) Not applicable

Intervention (if applicable) Not applicable

Statistical Analysis

- Relative risk or odds ratios of associations in study findings and then meta-analysis of pooled data from studies

Data Collection Summary:

Timing of Measurements: not applicable

Dependent Variables

- Cardiovascular death
- Myocardial infarct

Independent Variables

- Total alcohol consumption defined as low dose (1-4 drinks daily) or high dose (≥ 5 drinks daily)
- Consumption of type of drink (wine, beer, and spirits) in small amounts (1-4 drinks daily)
- Consumption of type of drink (wine, beer, and spirits) in large amounts (≥ 5 drinks daily)

Control Variables

Description of Actual Data Sample:

Initial N:

- 8 cohort studies reporting on association between alcohol consumption irrespective of the type of drink and cardiovascular death (N of various studies ranged from 1,226 - 276,802 subjects)
- 12 prospective cohort studies provided data on the risk of myocardial infarction and specific types of alcoholic drinks (N of various studies ranged from 1,563 - 129,170 subjects)

Attrition (final N): as above

Age: not reported

Ethnicity: not reported

Other relevant demographics:

Anthropometrics

Location: International studies

Summary of Results:

Key Findings

- In the meta-analysis of eight large cohort studies comparing the long-term effects of

low-dose (1-4 drinks daily) and high-dose (>5 drinks daily) drinking on overall mortality, a moderate but consistent effect was seen.

- The amount of alcohol consumption determined the direction of the effect in a J-shape or U-shape phenomenon as 1-4 drinks per day significantly reduced the risk of mortality while > 5 drinks per day increased the risk of mortality.
- Small doses of alcohol (1-4 drinks per day) are associated with a slightly reduced risk of mortality and coronary heart disease.
- Small doses of wine, beer and spirits are equally beneficial.
- Apart from a direct beneficial effect of low doses of alcohol and mortality and coronary heart disease, some psychological factors may contribute to its beneficial effect.
- Meta-analysis of 12 prospective cohort studies which examined the risk of myocardial infarction (MI) and specific types of drinks (beer, wine, spirits), indicated that alcoholic beverages are significantly associated with a reduction of the risk of MI, provided that no more than 4 drinks a day are consumed.
- Furthermore, meta-analysis showed that the differences between types of drinks were small, and that wine is no more protective than other alcoholic beverages.
- In meta-analysis of three observational studies comparing the relationship between MI and large dosages of different types of alcoholic beverages, the relative risks (numbers of infarctions among drinkers/number of infarctions among non-drinkers) were slightly above 1 in all of the categories and differences didn't reach statistical significance.
- High doses of alcohol (>5 drinks per day) are not associated with a reduced risk of death and CHD.
- This indicates there is not a lot of difference between high dose effects of different types of drinks.
- Apart from a direct effect of alcohol, confounding factors, particularly those of a psychological nature, may very well again contribute to the loss of benefits.

Author Conclusion:

Small doses of alcohol are associated with a reduced risk of mortality and CHD. Small doses of wine, beer, and spirits are equally beneficial. Apart from a direct beneficial effect of low doses of alcohol on mortality and CHD, some psychological factors may contribute to its beneficial effect. High doses of alcohol are not associated with a reduced risk of death and CHD. Apart from a direct effect of alcohol, again confounded factors, particularly those of a psychological nature, may very well contribute to the loss of benefit.

Reviewer Comments:

Search terms not described. No analysis of study quality or validity.

Research Design and Implementation Criteria Checklist: Review Articles

Relevance Questions

- | | | |
|----|---|-----|
| 1. | Will the answer if true, have a direct bearing on the health of patients? | Yes |
| 2. | Is the outcome or topic something that patients/clients/population groups would care about? | Yes |

3.	Is the problem addressed in the review one that is relevant to nutrition or dietetics practice?	Yes
4.	Will the information, if true, require a change in practice?	Yes

Validity Questions

1.	Was the question for the review clearly focused and appropriate?	Yes
2.	Was the search strategy used to locate relevant studies comprehensive? Were the databases searched and the search terms used described?	???
3.	Were explicit methods used to select studies to include in the review? Were inclusion/exclusion criteria specified and appropriate? Were selection methods unbiased?	???
4.	Was there an appraisal of the quality and validity of studies included in the review? Were appraisal methods specified, appropriate, and reproducible?	No
5.	Were specific treatments/interventions/exposures described? Were treatments similar enough to be combined?	Yes
6.	Was the outcome of interest clearly indicated? Were other potential harms and benefits considered?	Yes
7.	Were processes for data abstraction, synthesis, and analysis described? Were they applied consistently across studies and groups? Was there appropriate use of qualitative and/or quantitative synthesis? Was variation in findings among studies analyzed? Were heterogeneity issues considered? If data from studies were aggregated for meta-analysis, was the procedure described?	Yes
8.	Are the results clearly presented in narrative and/or quantitative terms? If summary statistics are used, are levels of significance and/or confidence intervals included?	Yes
9.	Are conclusions supported by results with biases and limitations taken into consideration? Are limitations of the review identified and discussed?	Yes
10.	Was bias due to the review's funding or sponsorship unlikely?	Yes

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